[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

[Docket No. 25611]

RIN 2120-AC84

Retrofit of Improved Seats in Air Carrier Transport Category Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of public meeting, reopening of comment period.

SUMMARY: This document announces a public meeting in which the Federal Aviation Administration (FAA) will discuss changes in and solicit comments and information from the public on the FAA's current draft rule to require the retrofit of improved seats in air carrier transport category airplanes. A Notice of Proposed Rulemaking (NPRM) that proposed requiring more crashworthy seats on most air carrier airplanes operating under parts 121 and 135 was published on May 17, 1988. The draft rule currently under consideration differs in some respects from the 1988 proposal. This document describes those differences and announces a 2-day public meeting at which the differences may be addressed and more current information and views obtained. This document also reopens the comment period.

DATES: The public meeting will be held on December 8 and 9, 1998, at 9:00 a.m., in Arlington, Virginia. Registration will begin at 8:30 a.m. on each day. Comments must be received no later than January 8, 1999.

ADDRESSES: The public meeting will be held at the Marriott Crystal Forum, 1999 Jefferson Davis Highway, Arlington, Virginia 22202-3564; telephone (703) 413-5500, facsimile (703) 413-0185.

Persons who are unable to attend the meeting and wish to submit written comments may mail their comments (clearly marked with the docket number) in triplicate to Federal Aviation Administration, Office of the Chief Counsel, Attention: Rules Docket (AGC-200), Docket No. 25611, 800 Independence Avenue SW., Washington, DC 20591, or deliver in person to room 915G at the same address. Comments also may be submitted electronically to the following Internet address: 9–nprm–cmts@faa.dot.gov. Comments may be inspected in room 915G weekdays, except Federal holidays, between 8:30 a.m. and 5:00 p.m. Written comments to the docket will receive the same consideration as statements made at the public meeting.

FOR FURTHER INFORMATION CONTACT: Requests to present a statement at the public meeting and questions regarding the logistics of the meeting should be directed to Ms. Terry Stubblefield, Aircraft and Airport Rules Division, ARM–200, Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591; telephone (202) 267-7624, facsimile (202) 267-5075. Technical questions should be directed to Mr. John Petrakis, Aircraft Engineering Division, AIR–120, Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591; telephone (202) 267-9274, facsimile (202) 267-5340. Cost/Benefit questions should be directed to Ms. Marilyn Don Carlos, Aircraft Regulatory Analysis Branch, APO-320, Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591; telephone (202) 267-3319, facsimile (202) 267-3324.

SUPPLEMENTARY INFORMATION: The public meeting will be held at the Marriott Crystal Forum, 1999 Jefferson Davis Highway, Arlington, Virginia 22202-3564; telephone (703) 413-5500, facsimile (703) 413-0185. Hotel reservations should be made in advance. A block of rooms has been reserved at the following two hotels:

- Hyatt Regency Crystal City at Washington National Hotel, 2799 Jefferson Davis Highway, Arlington, Virginia 22202; telephone (703) 418-1234, facsimile (703) 418-1289.
- Hilton Crystal City at National Airport, 2399 Jefferson Davis Highway, Arlington, Virginia 22202; telephone (703) 418-6800, facsimile (703) 418-3763.

Persons wishing to attend the public meeting are encouraged to make reservations at the Hyatt Regency Crystal City by November 16, 1998, or at the Hilton Crystal City by November 7, 1998, to take advantage of the special room rates. When making reservations, persons should contact the hotel directly using the telephone or facsimile numbers listed above and should indicate that they will be attending the Federal Aviation Administration public meeting.

The purpose of the meeting is for the FAA to (1) discuss with the public the draft final rule that is currently under consideration, which differs from the original proposal, (2) fully discuss the technical and cost-related issues of compliance with the retrofit of improved seats on air carrier transport category airplanes, and (3) hear comments from the public on these issues. The agenda for the meeting will include:

Day One:

- Review Technical Standard Order (TSO)–C127a changes.

- Review of latest Head Injury Criteria (HIC) research and component tester development.
- Review the NPRM (Notice No. 88–8) and text of the draft final rule currently under consideration.
- Discuss "16g-compatible seat" testing for passenger and flight attendant seats.
- Review in detail the cost/benefit analysis.
- Public presentations.

Day Two:

- Public presentations.
- Responses to questions and open discussion of identified issues.

Participation at the Public Meeting

Requests from persons who wish to present oral statements at the public meetings should be received by the FAA no later than December 1, 1998. Such requests should be submitted to Ms. Terry Stubblefield, Aircraft and Airport Rules Division, as listed in the section above titled "FOR FURTHER INFORMATION CONTACT" and should include a written summary of oral remarks to be presented and an estimate of time needed for the presentation. Requests received after the date specified above will be scheduled if there is time available during the meeting; however, the names of those individuals may not appear on the written agenda. The FAA will prepare an agenda of speakers and presenters and make the agenda available at the meeting. To accommodate as many speakers as possible, the amount of time allocated to each speaker may be less than the amount of time

requested. Persons requiring audiovisual equipment should notify the FAA when requesting to be placed on the agenda.

Background

Title III, section 303(b) of the Airport and Airway Safety and Capacity Expansion Act of 1987 (Public Law 100–223, December 30, 1987) mandates rulemaking to consider requiring improved crashworthiness standards for aircraft seats. The act states the following:

> Not later than 120 days after the date of the enactment of this Act, the Secretary [of Transportation] shall initiate a rulemaking proceeding to consider requiring all seats on board all air carrier aircraft to meet improved crashworthiness standards based upon the best available testing standards for crashworthiness.

On May 17, 1988, the FAA published crashworthiness standards for seats used in newly certificated transport category airplanes (53 FR 17640). On the same date, the FAA published an NPRM (Notice No. 88–8, 53 FR 17650) to require the retrofit of crashworthy seats on most existing transport category airplanes used in operations under 14 CFR parts 121 and 135. The NPRM proposed to prohibit the operation of these airplanes unless all passenger and flight attendant seats met the crashworthiness standards for newly certificated airplanes adopted concurrently by the agency in 14 CFR part 25, as noted above.

Approximately 70 commenters responded to Notice No. 88-8. Forty-five commenters agreed with the proposal, 14 opposed it, and 11 supported the

intent of the proposal but did not agree with all the provisions. Comments received in response to Notice No. 88–8, subsequent submittals, and information obtained during other public meetings are being considered in developing the proposed final rule.

Proposed Revisions Under Consideration

Based on comments to Notice No. 88-8, and other available information, the FAA is considering revisions to the proposed rule. The proposal currently under consideration is described as follows:

Section 121.311, Seats, safety belts, and shoulder harnesses, contains the current requirements. The FAA is considering adopting a new paragraph (j) that would prohibit the operation of each transport category airplane type certificated after January 1, 1958, unless all passenger and flight attendant seats in the airplane fully comply with the provisions of 14 CFR § 25.562, in effect on June 16, 1988. The FAA is considering an exception for airplanes operated in all-cargo operations. The prohibition would be effective 4 years after the date of publication of the final rule.

The FAA is also considering an alternative to paragraph (j), which would be contained in a new paragraph (k). The alternative would allow a transport category airplane type certificated after January 1, 1958, to continue to be operated after 4 years after the final rule is published, provided that all passenger and flight attendant seats comply with 14 CFR 25.562, or are properly marked as "16g-compatible." Any combination of seats that comply with 14 CFR 25.562, or are properly marked also would be acceptable. A seat could be properly marked as "16g-compatible" if it is manufactured before the 4 year date, and the Administrator has determined the seat type to be capable of carrying the resultant dynamic loads required in § 25.562(a) and (b),

without structural separation of primary structure, i.e., seat legs, frame, or seat track attachments. The concept of "16g compatible" is further described below.

The Administrator's determination that a seat type is "16g-compatible" would be required to be made before 3 years after publication of the final rule. The Administrator could make that determination on a later date if it is also determined that special circumstances make compliance by the 3 year date impracticable and that the public interest warrants a later date. A request for such an extension would be made to the Manager of the Transport Airplane Directorate, Aircraft Certification Service; in responding to that request, the Directorate would consider, among other things, the specific seats/seat types for which timely compliance would not be achieved, the reasons why compliance could not be achieved earlier, and the proposed schedule for compliance.

Analysis of Proposed Revisions Under Consideration

The FAA is describing the revisions currently under consideration to allow for public review prior to the public meeting. If the rule is adopted with the changes described above, seats that would be approved as "16g-compatible" would be required to undergo a supplemental certification. The supplemental seat certification process that will be administered by the FAA would be as follows.

Aircraft seats/seat types designed and manufactured to the requirements of TSO–C39, i.e., "9g seats" or the equivalent that an operator or seat manufacturer (applicant) considers to be "16g-compatible seats," would be required to be approved by the FAA. To qualify a "16g-compatible seat," the applicant would be required to show that the seat or seat type will withstand the forces addressed in 14 CFR § 25.562(a) and (b) without structural separation of the seat's primary structure. In addition, the applicant

would have to show that the occupant dummy remains in the seat during the test and would not be "entrapped" by the test article.

The responsibility for demonstrating compliance would rest with the operator. The responsibility for obtaining supplemental seat certification approval for "16g-compatible seats" would rest with either the air carrier operator or the aircraft seat manufacturer. The applicant would have to provide the FAA with sufficient seat dynamic test data to support a compliance finding. At a minimum, the data package would include the dynamic test results for a 16g forward test with floor warpage (for passenger seats only) and a 14g vertical test. The data would include a complete description of the test article (for example, configuration, weight, and restraints); other types of testing information (including test set up, type of anthropomorphic dummy, and detailed description of seat attachment to include type of floor track (representative floor track not required) or wall mounting, and seat floor or wall attach fittings (for passenger seats only)); facility used and observers present; test pulse characteristics (i.e., pulse shape, velocity change, and rise time); deformation measurements, if available; and any post-test observations, photos, and video documentation.

A seat shown to be a variation of an approved "16g-compatible seat" could be approved by similarity analysis. These related seats could be shown to be similar to a dynamic test article and/or the differences statistically analyzed to substantiate similarity. Modest seat weight increases not to exceed 6 percent would be allowed.

Applicants would submit their requests and substantiating test data package to their local Aircraft Certification Office for evaluation. Subsequent evaluation, if necessary, would be performed by a "Seat Evaluation Review Team" consisting of a core

of two or three engineers from the FAA's Aircraft Certification Service and the Civil Aeromedical Institute (CAMI), who would be responsible for the final technical evaluation and approval, to ensure standardization of evaluation.

Written supplemental seat approvals for seats meeting the requirements, when granted, would be issued by the Director, Aircraft Certification Service to the applicant, which could be either the aircraft seat manufacturer or the operator. Each applicant in possession of written approval would be required to provide the proper identification of its seats by ensuring that each seat permanently and legibly is labeled as follows: "16g Compatible per § 121.311" and date of application of the label. The label would be required to be conspicuously located next to the existing seat label.

The FAA will make available, upon request, information stating the makes and models of approved "16g-compatible seat" types. However, affected air carriers and commercial operators ultimately would be responsible for obtaining the necessary data and approval. The FAA anticipates that seat manufacturers and associations such as the Air Transport Association (ATA), National Air Transportation Association (NATA), Regional Airline Association (RAA), and others, who have worked with the FAA in the past to improve occupant safety, would share data and information with each other. The air carrier, commercial operator, or airplane manufacturer may get a seat manufacturer to share some of the burden of obtaining FAA approval of some aspects of seating system design. In any event, it is each operator's responsibility to obtain supplemental seat certification for continued operation of airplanes.

Cost/Benefit Information

Costs

The total cost of the 16g seat retrofit draft final rule will be $950.5 million ($518.7 million discounted at 7 percent) over the 20-year period from 1999 through 2018. In the development of this analysis the following assumptions were made:

1. On average, an airplane's service life is expected to be 42 years and its passenger seats are replaced at 14-year intervals.

2. Airplane passenger seats installed or replaced since 1992 are 16g compatible.

3. Flight attendant seats are not replaced.

4. The incremental cost of a 16g compatible passenger seat is $78. Installation costs are $65 per seat.

5. The average cost of a 16g flight attendant seat is $5,400. Installation costs are $85 per seat.

6. With a compliance date proposed at 4 years after the effective date of the rule, estimated to be January 1999, the costs of the rule include costs for the early replacement of some seats.

7. Downtime costs for airplanes whose seats will be replaced on an accelerated schedule (i.e., normal replacement would not occur before the compliance date) are $9,124 for the half-day estimated for installation.

8. A weight penalty of 1.5 pounds per passenger seat place and between 0 and 3 pounds per flight attendant seat was used.

9. The annual cost of carrying the additional weight of a passenger seat is $14.02, while the annual cost of the additional weight of a flight attendant seat is $8.42 (weighted average).

10. Although the FAA believes air carriers will replace "16g-compatible seats" with "16g-compatible seats," the FAA has included the incremental costs of the "16g passenger seats" and their weight penalties from the date of replacement after the effective date of the rule.

11. An average of six passenger seats per airplane will need to have additional protection to comply with front-row HIC. The cost of this protection, which could be in the form of a special seat belt, is estimated to be $50 per seat.

12. Air carriers will not need to remove a row of seats, avoiding lost revenue.

13. No structural modifications to the airframe of affected airplanes will be necessary as a result of the rule.

The total estimated cost for seats, installation, weight penalties, and downtime for certain airplanes is $637.8 million. Certification costs during the period will be $312.7 million ($156.8 million discounted). The cost to show 16g compatibility is estimated to be $100,000 per certification. The cost to show full 16g requirements is $200,000 per certification. The cost per certification to show 16g requirements for a similar configuration is $40,000.

Benefits

The benefits of the 16g seat retrofit rule are estimated to range from $680 million to $1.2 billion ($290 to $530 million, discounted) over a 20-year period.

These benefits are based on the number of fatalities and injuries that would be avoided given accident rates that had survivors. Approximately 210 to 410 fatalities and 220 to 240 serious injuries would be avoided over a 20-year period.

The range of benefits stems from the uncertainty in determining whether a given fatality would have been prevented with a 16g seat (researchers' confidence in the specific cause of fatalities varied across accidents, seat location, etc.).

Information Requested

Based on the length of time since the close of the comment period, the FAA has determined that it is in the public interest to reopen the comment period on this NPRM to seek additional data and supporting methodology in the following areas:

1. How many applications for seat certifications (basic vs. modification) should the FAA expect per year for each seat class — flight attendant, tourist, business, and first class for both 16g and "16g-compatible"?

2. What will it cost to certificate a "16g-compatible seat" vs. a full 16g seat?

3. What is the structural weight increase/decrease between a 16g and a 9g seat, by class?

4. What percentage of seats produced since 1992 are "16g-compatible?"

5. Are the assumptions valid that passenger seats are replaced, on average, every 14 years, and that flight attendant seats are rarely replaced?

6. What is the average retirement age for an airplane when it leaves part 121 or part 135 service?

7. What are various means of complying with front-row HIC? How much do they cost? Are there disadvantages to installing a y-belt? What about removable bulkheads, airbags, or shoulder harnesses? What is the incremental cost of a y-belt, a shoulder harness, and an airbag?

8. The FAA received comments stating that removing a row of seats is the only way to comply with HIC. What is the foundation for that comment? Is the answer different depending on whether the airplane is a wide or narrow body?

9. The FAA received comments that estimated the cost associated with loss of one seat per flight per day. Did that comment take into consideration the fact that, because most people book seats in advance, these passengers could rebook seats on nonfilled flights?

10. How long would it take to remove old seats and install 16g or "16g-compatible seats" in an airplane? When would new seat installations most likely be done? Would they be done in service or during C checks or D checks?

Accordingly, the FAA will conduct a 2-day public meeting in Arlington, Virginia, for the purpose of gathering this additional information.

The comment period on the proposed rule will remain open until January 8, 1999, 30 days after the close of the public meeting. The FAA will use this public meeting as a forum to discuss previously submitted comments, hear new comments, and accept additional data and supporting methodologies from the public.

Persons interested in obtaining a copy of Notice No. 88–8 should contact Ms. Terry Stubblefield, Aircraft and Airport Rules Division, at the address, telephone number, or facsimile number provided in the section above titled "FOR FURTHER INFORMATION CONTACT."

An electronic copy of the Notice of Public Meeting and Notice No. 88-8 may be downloaded using a modem and suitable communications software from the FAA regulations section of the FedWorld electronic bulletin board service (telephone: (703)

321-3339) or the Government Printing Office's (GPO) electronic bulletin board service (telephone: (202) 512-1661).

Internet users may reach the FAA's web page at http://www.faa.gov or the GPO's web page at http://www.access.gpo.gov/su_docs to access recently published rulemaking documents.

Public Meeting Procedures

Persons who plan to attend the meeting should be aware of the following procedures established for this meeting:

1. There will be no admission fee or other charge to attend or to participate in the public meeting. The meeting will be open to all persons who have requested in advance to present statements or who register on the day of the meeting (between 8:30 a.m. and 9:00 a.m.), subject to availability of space in the meeting room.

2. Representatives from the FAA will conduct the public meeting. A panel of FAA experts will be present to discuss information presented by participants.

3. The public meeting is intended as a forum to seek additional data and to obtain clarification of supporting methodologies from the industry. Participants must limit their presentations and submissions of data to this issue.

4. The meeting will offer the opportunity for all interested parties to present additional information not currently available to the FAA, and will provide an opportunity for the FAA to explain the methodology and technical assumptions supporting its current conclusions.

5. FAA experts and public participants are expected to engage in a full discussion of all technical material presented at the meetings. Each person presenting

conclusions will be expected to submit to the FAA data fully supporting those conclusions; all proprietary data submitted will be protected by the FAA from disclosure in accordance with applicable laws.

6. The FAA will try to accommodate all speakers; therefore, it may be necessary to limit the time available for an individual or group. If necessary, the meeting may be extended to evenings or additional days. If practicable, the meeting may be accelerated to enable adjournment in less than the time scheduled.

7. Sign and oral interpretation can be made available at the meeting, as well as an assistive listening device, if requested 10 calendar days before the meeting.

8. The meeting will be recorded by a court reporter. A transcript of the meeting and all material accepted by the panel during the meeting will be included in the public docket, unless protected from disclosure. Each person interested in purchasing a copy of the transcript should contact the court reporter directly. This information will be available at the meeting.

9. The FAA will review and consider all material presented by participants at the public meeting. Position papers or material presenting views or information related to the draft final rule may be accepted at the discretion of the presiding officer and will be subsequently placed in the public docket. The FAA requests that presenters at the meeting provide 10 copies of all materials to be presented for distribution to the panel members; other copies may be provided to the audience at the discretion of the presenter.

10. Statements made by members of the panel are intended to facilitate discussion of the issues or to clarify issues. Comments made at these public meetings will be considered by the FAA before making a final decision on issuance of the final rule.

11. The meeting is designed to solicit public views and more complete information relevant to the final rule under consideration. Therefore, the meeting will be conducted in an informal and nonadversarial manner.

Issued in Washington, DC, on October 23, 1998.

/s/ Douglas Kirkpatrick

Acting Director, Aircraft Certification Service